AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, and etching the metal film with a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas.

2. (currently amended) The [[A]] method of Claim 1, wherein the pressure of the mixture gas is 0.6 Pa or greater, but not greater than 1.5 Pa ~~but 0.6 Pa or greater~~.

3. (currently amended) The [[A]] method of Claim 1, wherein the CH_2Cl_2 gas has a purity of 99.99% or greater.

4. (currently amended) The [[A]] method of Claim 1, wherein the plasma is generated using an electromagnetic wave within a frequency range of 300 MHz to 1 GHz.

5. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises forming a

multilayer interconnection of metals including aluminum over a semiconductor substrate, wherein, for ~~upon~~ etching of the metal multilayer interconnection, a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas is used.

6. (currently amended) The [[A]] method of Claim 5, wherein the pressure of the mixture gas is 0.6 Pa or greater, but not greater than 1.5 Pa ~~but 0.6 Pa or greater~~.

7. (currently amended) The [[A]] method of Claim 5, wherein the CH_2Cl_2 gas has a purity of 99.99% or greater.

8. (currently amended) The [[A]] method of Claim 5, wherein the plasma is generated using an electromagnetic wave within a frequency range of 300 MHz to 1 GHz.

9. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises forming metal films by stacking a first TiN film, an Al film and a second TiN film successively over a semiconductor substrate, and etching said first TiN film, said Al film and s cond TiN film ~~the metal films~~ with a plasma of a mixture gas of a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 additive

gas, wherein the CH_2Cl_2 gas is added in an amount of 0 to 4% for ~~upon~~ etching of the second TiN film, and ~~whereas~~ the amount of the CH_2Cl_2 gas is increased to 5 to 30% during etching of the Al film.

10. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, forming a resist mask over the metal film, etching the metal film with a plasma of a mixture gas of a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas, and removing the resist mask with a plasma of a mixture gas containing an F element and an O element.

11. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, forming patterns at a wiring pitch less than 500 nm over the metal film, and etching the metal film with a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas.

12. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, forming, over the metal film, first mask patterns at a first wiring pitch and second mask patterns at a second wiring pitch wider than the first wiring pitch, and etching the metal film ~~films~~ with a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas.

13. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, forming, over the metal film, first patterns at a first wiring pitch and second patterns at a second wiring pitch wider than the first wiring pitch, and etching the metal film with a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas.

14. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises forming metal films over a semiconductor substrate by stacking a

first TiN film, an Al film and a second TiN film one after another, and etching said first TiN film, said Al film, and second TiN film ~~the metal films~~ with a plasma of a mixture gas containing a Cl_2 gas, a BCl_3 gas and an additive gas obtained by diluting a CH_2Cl_2 gas with a dilution gas, wherein the mole concentration of the CH_2Cl_2 gas after dilution with the dilution gas is 10% to 100%.

15. (currently amended) The [[A]] manufacturing method of a semiconductor device, which comprises depositing a metal film made of ~~including~~ an aluminum alloy over a semiconductor substrate, and etching the metal film with a plasma formed, in a plasma etching system for generating a plasma by using an UHF-range electromagnetic wave, from a mixture gas containing a Cl_2 gas, a BCl_3 gas and a CH_2Cl_2 gas.